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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,906	11/18/2003	Ming Hsiung Liu	LIU75	3985
1444	7590	10/05/2005	EXAMINER	
BROWDY AND NEIMARK, P.L.L.C. 624 NINTH STREET, NW SUITE 300 WASHINGTON, DC 20001-5303			ORTIZ, ANGELA Y	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,906

Applicant(s)

LIU, MING HSIUNG

Examiner

Angela Ortiz

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear how step (c) prepares the mold by way of the first mold not contacting the second die, but still forms an "enclosed mold cavity"; and further in step (d), wherein the method claims opening the mold, which was not closed.

Claim 1 sets forth "an integrated circuit chip packaging" process, but does not include an actual step of forming "an integrated circuit chip" or "packaging".

Claim 1, line 5 and line 16, "said sub-substrate" does not have strict antecedent basis in the singular form.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1732

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyajima, USP 6,344,162 in view of LoBianco et al., USP 6,596,212.

The cited primary reference substantially teaches the basic claimed method of molding an integrated circuit chip package comprising the steps of providing a substrate 12 with a plurality mounting sites, and electrically connecting a plurality of semiconductor chips 10 at the mounting sites on the substrate 12. The mounted substrate 12 is placed within a molding cavity formed between upper mold 20 and lower mold 21, and resin is injected into the mold cavity to encapsulate the chips 10. The substrate 12 is clamped between the mold dies prior to encapsulation. After encapsulation, the substrate is cut and subdivided to form a plurality of encapsulated semiconductor devices. While the reference does not set forth ceramic substrates, note that such are conventional in the art and would have been obvious to include as an equivalent alternative. See col. 4, lines 6-40; col. 5, lines 40-60; col. 6, lines 15-20.

The cited primary reference does not teach not contacting the mold to the substrate, or an intermediate mold plate and different cavity sizes.

The added secondary reference teaches as conventional a similar encapsulation molding process further including the feature of providing an intermediate mold plate 100, wherein the cavity size of the mold can be modified without retooling the apparatus. The method further includes forming an enclosed molding cavity by not contacting the mold to the substrate, but instead contacting the intermediate plate. Such a step allows the thickness of the molded resin to be varied. See col. 3, lines 25-50; col. 4, lines 1-23.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an intermediate plate, and form an enclosed molding cavity by not contacting the substrate with a mold part as shown in the added reference, when performing the process set forth in the primary reference, for molding plastic chip packages of varying thicknesses.

With respect to claim 2, see plate 100 of USP 6,596,212.

With respect to claim 3, note the benefit of using the intermediate plate 100 is the creation of varied cavity sizes as set forth at col. 3, lines 1-25 of USP 6,596,212. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a smaller cavity in one die than in the other die as the plates (shims) can cause the cavity size to increase as demonstrated in the applied reference.

Art Unit: 1732

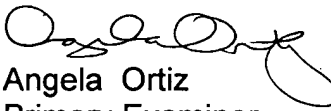
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP's 4801561; 5344600; 5766535; 5958466; 6676885; 6913950.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela Ortiz whose telephone number is 571-272-1206. The examiner can normally be reached on Monday-Thursday 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaiani can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Angela Ortiz
Primary Examiner
Art Unit 1732

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